INDIANA
Epidemiology
NEWSLETTER

Indiana State Department of Health

Epidemiology Resource Center
2 North Meridian Street, 3-D
Indianapolis, IN 46204
317/233-7416

August 2004
Vol. XII, No. 8

Suspect Norovirus Outbreaks Hit Schools Hard Across Indiana

By Pam Pontones, MA
ISDH Field Epidemiology Director

Several schools have reported outbreaks of apparent viral gastroenteritis since the start of school this year. Outbreaks have been identified in several counties, including Fulton, Wells, Orange, and Marion. The ISDH received notification of the first outbreak on August 20, with other outbreaks reported since then.

Symptoms reported with these outbreaks include a sudden onset of nausea, vomiting, and diarrhea. In most of the outbreaks, a few cases reported symptom onset prior to the start of school. After school starts, a surge in cases is observed, presumably due to closer contact of students and school staff members. Therefore, school populations are serving as "sentinels" for transmission within the larger community, and the illness is reported.

Local health departments in the affected counties and the ISDH are actively investigating these outbreaks. Although specimen results are pending from ill cases, the illness closely resembles viral gastroenteritis. The most common agent of viral gastroenteritis is Norovirus. Viral gastroenteritis is transmitted through the fecal-oral route, either via contaminated food or beverages or through person-to-person contact. Since no ill food workers or suspected food vehicles have been identified to date, the illness is most likely being transmitted person-to-person. Most cases have reported contact with another ill person prior to onset. In addition, many family members and other close contacts of cases have also become ill. Agents of viral gastroenteritis are highly infectious and environmentally stable.

Symptoms of viral gastroenteritis include a sudden onset of nausea, vomiting, diarrhea, headache, body aches, chills, but little to no fever. Symptoms usually begin within 12-48 hours after exposure. The illness usually resolves on its own within 1-2 days without complications. Dehydration may result after prolonged vomiting and diarrhea, particularly in young children, the elderly, and those with weakened immune systems. **The best method to prevent transmission is to always wash hands: after using the restroom, before eating, and before preparing food. People infected can shed virus in stool up to 2 weeks after symptoms stop, so continued, proper hand washing is essential.**

Article	Page No.

Those who are ill or become ill at school, including students and staff members, should be excluded from school until symptoms stop.

What Schools Can Do:

1. School nurses or other school officials should immediately report increased cases of gastroenteritis or absenteeism to their local health departments (LHD).

2. Exclude ill students and staff members from school immediately.

3. School officials can consider distributing a "dear parent" letter describing the illness and prevention measures. The ISDH has sample letters available. It may be helpful to include the ISDH "Quick Facts" sheets on viral gastroenteritis and hand washing. Those may be found on the ISDH web site at www.statehealth.in.gov, select the health information link, and select "Quick Facts". The LHD can provide valuable guidance for writing these letters.

4. Disinfect all common surfaces, including but not limited to, countertops, chairs, desks, restrooms, floors, handrails, elevator buttons, and doorknobs with a 10% solution of household bleach.

5. Ensure that restrooms are fully supplied with soap, disposable towels and/or functioning hand dryers. Common towels should not be used.

6. Stress the importance of hand washing and exclusion of ill students from school to students and parents.

What Local Health Departments Can Do:

1. Report suspected outbreaks immediately to your ISDH field epidemiologist or the ISDH central office at 317-233-7125.

2. Assist school officials with guidance for "dear parent" letters, exclusion of ill students and staff members from school, and environmental disinfection.

3. Although these outbreaks are currently displaying the same pattern of occurrence and transmission, it is still important to rule out foodborne illness and other causes of diarrheal illness. Therefore, the ISDH recommends stool testing of at least three individuals exhibiting diarrhea. Please use the 7A collection containers and complete both the Enteric submission form (found in the container) and the Virology request form (available from ISDH). **Specimen vials inside the containers must be labeled with patient name and collection date**. These must be stored and transported cold to the ISDH Laboratories. Please include the local health department address in the submitter address block on the forms.

4. The ISDH recommends interviewing 20-30 ill cases (students, school staff, or household contacts) to determine if the illness clinically resembles viral gastroenteritis. Questionnaires are available from the ISDH.

5. Contact your ISDH field epidemiologist or the ISDH central office for any assistance or guidance.

What the ISDH Can Do:

1. Provide assistance or guidance regarding clinical illness information, outbreak investigation, exclusion, and environmental disinfection.

2. Supply 7A specimen collection containers, forms, and transportation guidance to local health departments. Specimens will be tested at the ISDH Laboratories for Norovirus and common agents of bacterial diarrheal illnesses.

3. Provide "dear parent" sample letters and case interview questionnaires to local health departments.

4. Provide guidance for media issues.

The ISDH commends the school staff members and local health departments for their cooperation and diligent efforts to report and investigate these outbreaks and implement control measures.

Influenza Surveillance

Shawn Richards, Respiratory Epidemiologist
ISDH Epidemiology Resource Center

Indiana Influenza Surveillance 2003-2004

Influenza surveillance during the 2003-2004 influenza season was conducted in cooperation with the U.S. Centers for Disease Control and Prevention (CDC). Thirty-two Indiana physicians, nurse-managed clinics, emergency departments, immediate care facilities, and university student health centers volunteered to be sentinel physicians/sites. Sentinel reporting locations and number of participating sites are provided in Figure 1.

Surveillance for the 2003-2004 influenza season began the week ending Saturday, September 28, 2003, and continued weekly through May 17, 2004, tracking the numbers of patients presenting to health care providers for "influenza-like illness" (ILI). For the purpose of surveillance, the CDC defines ILI as "Fever (>100^0 F. [37.8^0 C.] oral or equivalent) and cough or sore throat (in absence of a known cause)." In addition to tracking how many patients presented with ILI, participants reported the total number of patients categorized by specified age groups. Sentinel sites submitted weekly reports to the repository at the CDC via the Internet, phone, or fax. Additionally, sentinel participants collected nasopharyngeal swabs from patients with ILI whose onset of classic clinical signs started within 72 hours of the appointment. The swabs were then sent to the Indiana State Department of Health (ISDH) Laboratories. The ISDH Laboratory conducted viral isolation and identification of influenza virus by type and subtype. During the surveillance period, sentinel sites saw 114,780 patients, of which 2,861 sought care for ILI. A health care facility that wishes to participate as a sentinel site should contact Shawn Richards at srichard@isdh.state.in.us.

Figure 2 supports the findings for the percentage of patients seeking care for ILI during the 2003-04 season, as well as a baseline of influenza-like illness for the previous five years.

Figure 1.

Counties with Sentinel Physicians and Number of Participating Sentinel Sites, 2003-2004

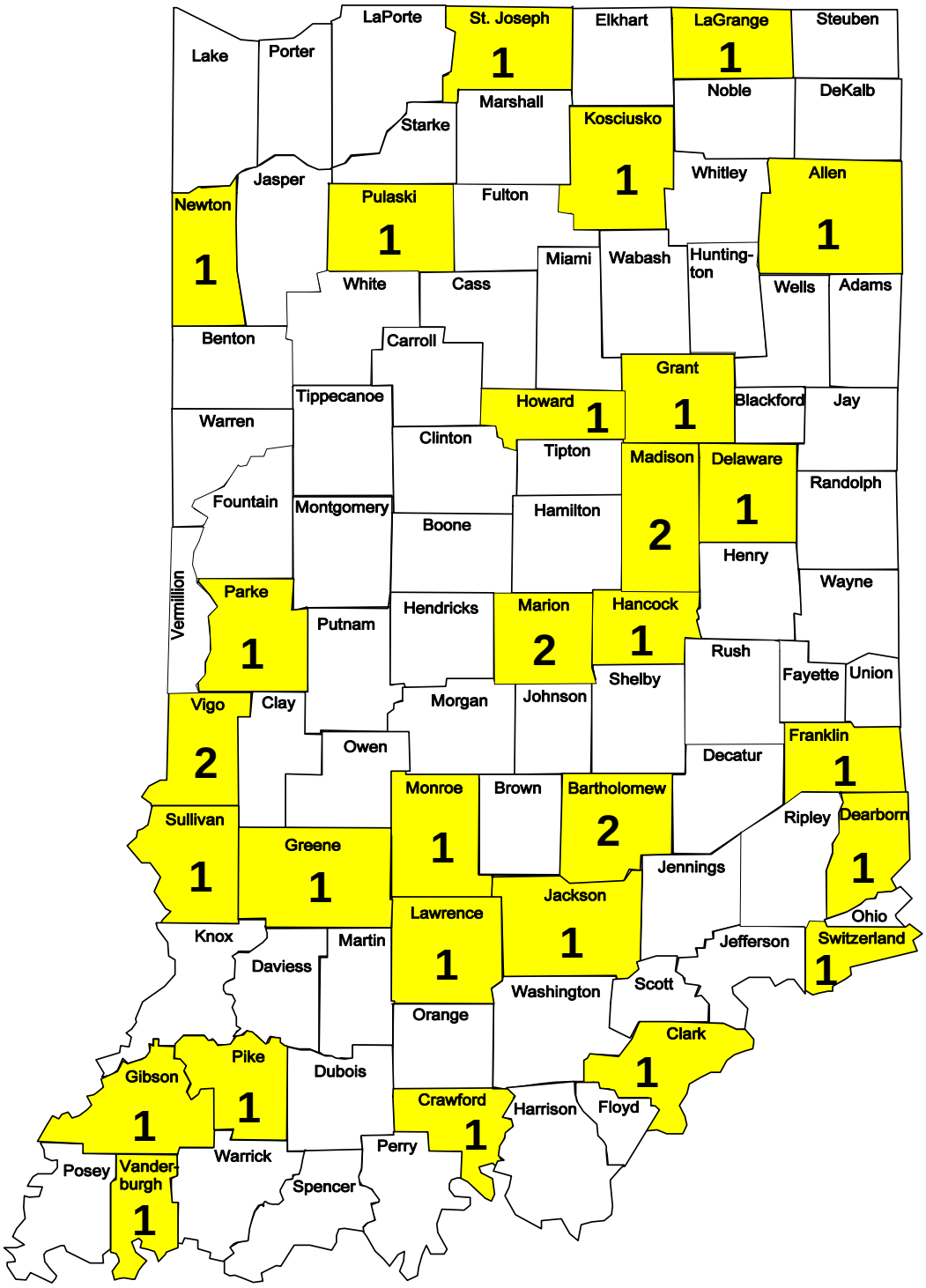
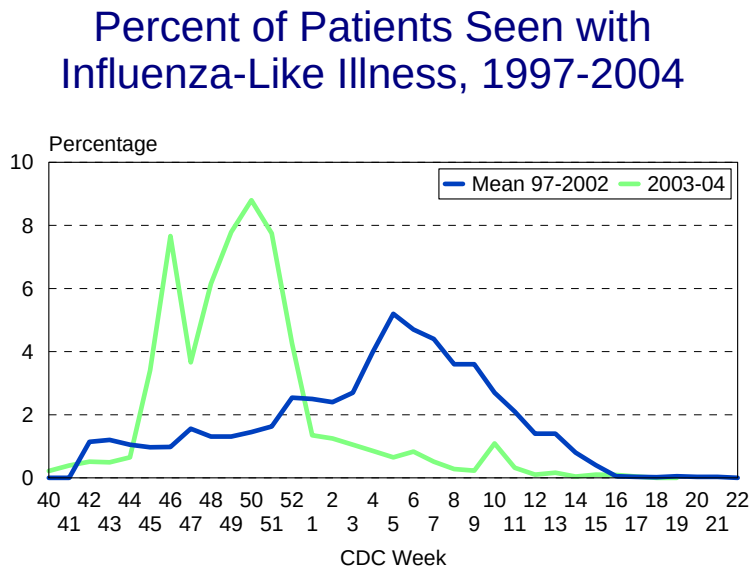


Figure 2.



The index case occurred during the week ending 11/08/03. The specimen was typed as influenza A (H3N2) by the ISDH Laboratories by both isolation and antigen detection. The specimen was obtained from a resident of Delaware County with an illness onset date of 11/04/03. The percentage of patients seen with ILI peaked with the week ending 12/20/03. This was an unusual occurrence as the peak occurs generally 6-8 weeks later after the onset of the index case. Universities in the sentinel program were among the first to communicate with the ISDH as to large amounts of students seen in the health centers for ILI. The alert was heightened after they communicated that several rapid tests had been positive for influenza. The sentinels were asked to submit their specimens to the ISDH Laboratory to identify the virus. This was of particular importance because some other states had reported several deaths of which seemed to hit the pediatric population hard. Influenza A viruses were the only ISDH Laboratory-confirmed influenza viruses throughout Indiana. Two hundred eight (208) nasopharyngeal swabs from the sentinel physicians were submitted for testing to the ISDH Laboratory. One hundred five (50%) of the 208 specimens submitted to the ISDH Laboratory by the sentinel physicians tested positive for influenza. One hundred two (97%) of the positive specimens submitted were sub-typed as influenza A/H3N2/Panama/2007/99-like. One (<1%) of the positive specimens was subtyped as Influenza A/H3N2/Korea/770/2002-like. Two (2%) were influenza A (unable to subtype). Table 1 is provided by the ISDH Laboratories and shows the number of specimens submitted for testing and the results per month.

Table 1. Influenza Summary for 2003-2004

July 2003		
Influenza A (unable to subtype)	1	
August- September 2003		
NO SPECIMENS RECEIVED		
October 2003		
Negative/no virus recovered	2	
Other respiratory virus	1	
November 2003		
Influenza A H3N2/Panama/2007/99-like	22	
Negative/no virus recovered	17	
Unsatisfactory	2	
Other respiratory virus	3	
December 2003		
Influenza A H3N2/Panama/2007/99-like	49	
Influenza A H3N2/Korea/770/2002-like	1	
Influenza A (unable to subtype)	1	
Negative/No virus recovered	66	
Unsatisfactory respiratory specimens	3	
January 2004		
Influenza A H3N2/Panama/2007/99-like	31	
Negative/No virus recovered	3	
Unsatisfactory respiratory specimens	4	
February 2004		
Negative/No virus recovered	2	
Unsatisfactory respiratory specimens	1	
March-April-May 2004		
NO SPECIMENS RECEIVED		
TOTAL FOR 2003-2004		
Influenza A/H3N2/Panama/2007/99-like	102	
Influenza A/H3N2/Korea/770/2002-like	1	
Influenza A (unable to subtype)	2	
TOTAL POSITIVE INFLUENZA A (combined)		105
Negatives	90	
Other Virus	4	
Unsatisfactory	9	
TOTAL INFLUENZA SPECIMENS SUBMITTED (including both negatives and positives)		208

*No Influenza B viruses were isolated during 2003-2004 season.

Influenza Vaccine for the 2004-2005 Season

The trivalent influenza vaccine components for the 2004-2005 season will include:

- A/New Caledonia/20/99-like virus, H1N1
- A/Fujian/411/2002-like virus, H3N2
- B/Shanghai/361/2002-like

These viruses will be used in this year's vaccine because of their growth properties and their representativeness of the anticipated circulating influenza A and B viruses.

Influenza Vaccine Supply and Production

Vaccine manufacturers are projecting 90-100 million doses of vaccine for the 2004-2005 season, although the projected number of doses is greater than last year's total number of vaccine available. Two of the manufacturers, Aventis and Powderject Vaccine (Evans), will produce the influenza vaccine in the injectable form. A list of influena distributors is available by the Health Industry Distributors Association at http://www.hidanetwork.com/govtrelations/flulinks.asp. MedImmune will manufacture the intra-nasal live attenuated virus vaccine. Quality assurance complications at the manufacturer have delayed vaccine shipment until October. However, complications can arise at any stage of the manufacturing process. The ISDH has enhanced their influenza web site which contains Vaccine Information Statements (VIS), storage and handling of influenza vaccine, scheduled influenza clinics, CDC recommendations for who should be vaccinated, and many documents available in the Spanish language. This web site can be accessed at www.statehealth.in.gov/healthinfo/influenza.htm.

Importance of Properly Vaccinated Health Care Workers Against Influenza

In the United States, the primary option for reducing the effect of influenza is immunoprophylaxis with vaccine. Inactivated (i.e., killed virus) influenza vaccine and live, attenuated influenza vaccine are available for use in the United States (see Recommendations for Using Inactivated and Live, Attenuated Influenza Vaccine). Vaccinating persons at high risk for complications and their contacts each year before seasonal increases in influenza virus circulation is the most effective means of reducing the effect of influenza. Vaccination coverage can be increased by administering vaccine to persons during hospitalizations or routine health-care visits before the influenza season, making special visits to physicians' offices or clinics unnecessary (1). When vaccine and epidemic strains are well matched, achieving increased vaccination rates among persons living in closed settings (e.g., nursing homes and other chronic-care facilities) and among staff can reduce the risk for outbreaks by inducing herd immunity (*2*). Beginning in October each year, health-care facilities should offer influenza vaccinations to all personnel, including night and weekend staff. Particular emphasis should be placed on providing vaccinations to persons who care for members of groups at high risk. Efforts should be made to educate health-care personnel regarding the benefits of vaccination and the potential health consequences of influenza illness for themselves and their patients. All health-care personnel should be provided convenient access to influenza vaccine at the work site, free of charge, as part of employee health programs (1). Vaccination for severe influenza illness can also reduce transmission of influenza and subsequent health-care workers and other persons in close contact with persons at increased risk for influenza-related complications. Antiviral drugs used for chemoprophylaxis or treatment of influenza are key adjuncts to vaccine (see *Recommendations for Using Antiviral Agents for Influenza*). However, antiviral medications are not a substitute for vaccination.

The CDC has published several documents focusing on the importance of influenza vaccination. These resources are available at the following web sites.

Health Care Workers –A Call to Action
www.cdc.gov/mmwr/preview/mmwrhtml/rr5306a1.htm

Respiratory Hygiene and Cough Etiquette
www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm

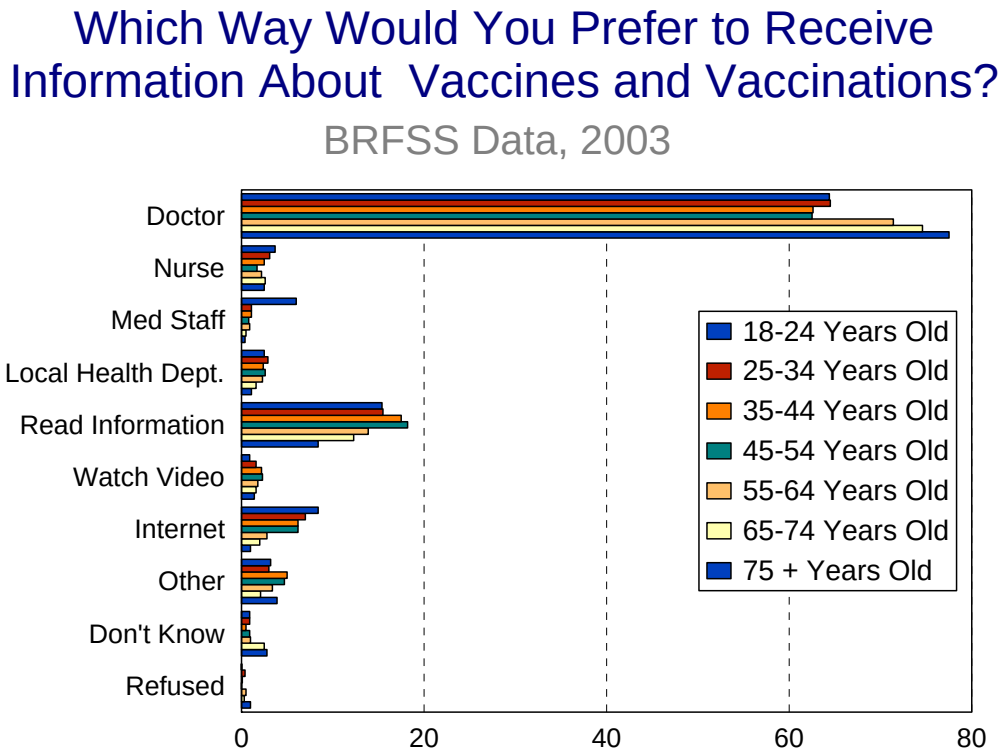
Detection and Control of Influenza Outbreaks in Acute Care Facilities
www.cdc.gov/ncidod/hip/INFECT/flu_flow.htm

Draft Flow Chart for Surveillance and Control of Influenza in Acute Care Facilities
www.cdc.gov/hip/INFECT/flu.htm

BRFSS Data

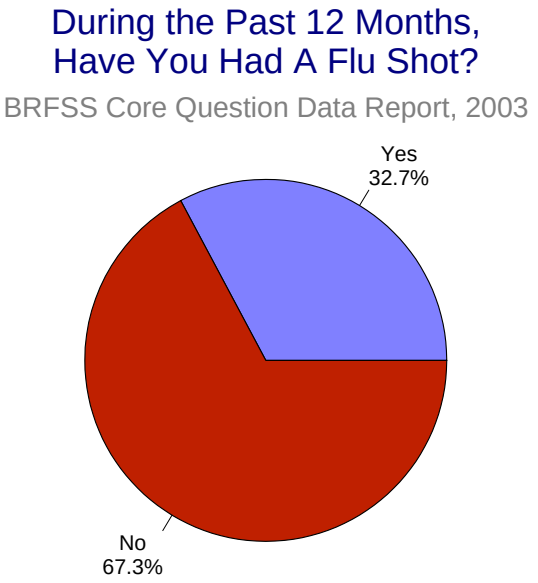
The Behavioral Risk Factor Surveillance Survey (BRFSS) is the largest continuously conducted health survey in the world. It was developed in 1984 by the Centers for Disease Control and Prevention to collect data on major behavioral risk factors that contribute to premature death and disability. Emerging health concerns and other critical health issues are also included in the survey. All 50 states and the District of Columbia participate in this random-dial telephone survey of adults ages 18 years and older. The ISDH added five additional questions on the 2003 BRFSS. One of the questions was added to discover how Indiana citizens prefer to receive information about vaccines and vaccinations. Figure 3 shows the results from the state-added question.

Figure 3.



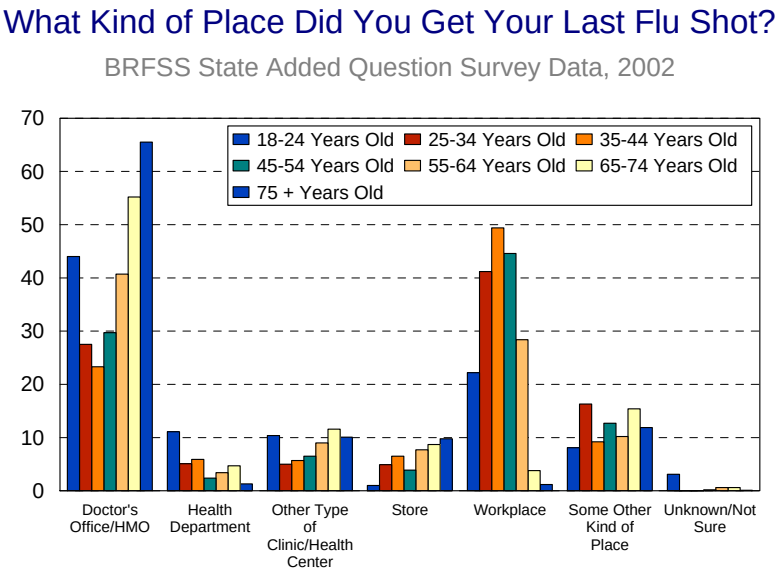
See Figure 4 for the results from the core question, " During the past 12 months, have you had a flu shot?"

Figure 4.



In 2002 the ISDH added another State-added question, "What kind of place did you get your flu shot?" See Figure 5 for the results from that state-added question.

Figure 5.



References

1. Harper SA, Fukuda K, Uyeki TM, Cox NJ, Bridges CB. Prevention and control of influenza: Recommendations of the advisory committee on immunization practices. MMWR May 28, 2004.

2. Patriarca PA, Weber JA, Parker RA, et al. Risk factors for outbreaks of influenza in nursing homes: a case-control study. Am J Epidemiol 1986;124:114--9.

ISDH To Expand Laboratory Capacity With Two New Facilities

Mark Glazier
Microbiologist
ISDH Bioterrorism Laboratory

Architectural rendition of the State of Indiana Forensic and Health Sciences Laboratories.
Photo courtesy of the Indiana State Police.

In early June, Governor Joe Kernan and other state officials broke ground for a new $46 million laboratory building. The State of Indiana Forensic and Health Sciences Laboratories will house the Indiana State Department of Health Laboratories, the Indiana State Police Forensic Laboratories, and the State Department of Toxicology, which is affiliated with the Indiana University School of Medicine.

The facility will be located at 550 West 16th Street, northwest of the intersection of 16th Street and Dr. Martin Luther King Jr. Street, in the heart of the Central Indiana life sciences corridor. The 188,000 square-foot building will include two three-story wings, joined by a three-story connector. The State Police Forensic laboratories will occupy the wing nearest to 16th Street, while the wing north of the connector will house the Indiana State Department of Health (ISDH) and State Toxicology Laboratories.

The building will contain laboratory training rooms, which can be utilized to improve the proficiency of laboratory technicians across Indiana. The wing housing the ISDH Laboratories will also include state-of-the-art laboratory facilities for handling threats of chemical and biological terrorism.

Ratio Architects of Indianapolis leads the design team for the facility. Completion of the building is scheduled for the fall of 2006.

Another building project currently underway at the ISDH is the installation of a modular bio-safety level 3 (BSL-3) containment laboratory. The nearly 3,000 square-foot unit will contain laboratory space for handling chemical and biological agents from suspected terrorism events.

The modular unit contains a receiving area, with a glove box and an x-ray machine to examine a sample prior to testing. The unit is equipped with two separate laboratory areas, one for handling chemical materials and another for handling biological materials. It also includes a restroom and shower, a hydrogen peroxide decontamination system, and a generator.

Exterior view of the ISDH modular bio-safety level 3 containment laboratory. Photo courtesy of Bill White, ISDH

Interior of the ISDH modular bio-safety level 3 containment laboratory. Photo courtesy of Bill White, ISDH.

The modular lab was manufactured by a company in Iowa and transported in sections on semi-tractor trailers to the site in Indianapolis. The various sections were unloaded by a 150-ton crane and placed on a concrete slab foundation. When the electrical, plumbing, and other systems have been connected and thoroughly inspected, the lab will be turned over to the ISDH. The unit is expected to be fully operational by the September 2004.

Training Room

Indiana State Department of Health
Immunization Program Presents:
"Child and Adolescent Immunizations from A to Z"

The ISDH Immunization Program and Health Educators are offering this free, one-day educational course on all aspects of immunization practices. Topics include:

- Principles of Vaccination
  - Overview of the immune system
  - Classification of vaccines
- An overview of Vaccine-Preventable Diseases
- General Recommendations on Immunization
  - Timing and spacing
  - Contraindications and precautions to vaccination
- Safe and Effective Vaccine Administration
  - Prior to administration
  - Administration
  - Documentation and reminder/recall
  - Adverse Events
- Safe Vaccine Storage and Handling
- Indiana Requirements
  - Schools
  - Day care/Head Start
  - Exemptions
- Tools to read Immunization Records
- Vaccine Misconceptions
  - MMR and autism
  - Thimerosal and mercury
  - Overloading the immune system
  - Influenza vaccine
- Reliable Resources

This course is designed for all immunization providers and staff. Presentation of this course takes six hours or can be customized to provide the components needed for your office or clinic staff. A training manual and certificate of attendance is provided to all attendees.

Courses are held throughout Indiana about four times per month (see schedule next page). All persons involved in immunizations are encouraged to attend a course in their area. Registration is required. To attend or schedule/host a course in your area, or for more information on "Child and Adolescent Immunizations from A to Z" and other immunization education opportunities, please contact Beverly Sheets by calling (317) 501-5722, or email hepbbev@aol.com

CALENDAR 2004 "IMMUNIZATIONS FROM A TO Z"

Sept. 1, 2004 "Immunization A-Z" Lake County, Crown Point, 9AM-3PM

Sept. 9, 2004 "Immunization A-Z" Tippecanoe County, K. Weil Center for Ed, 9AM-3PM

Sept. 15, 2004 "Immunization A-Z" Indianapolis. Medical Mgmt. (FULL)

Sept. 17, 2004 "Immunization A-Z" ISDH Rice Auditorium, 9AM-3PM

October 4 and 8, 2004 "Indiana Immunization Fall Awards Conferences"

Oct. 19, 2004 "Adult Immunizations" St. Vincent Office Associate Health Promotion, 8AM-12PM Indianapolis. (FULL)

Oct. 21, 2004 "Immunization A-Z", South Bend Memorial Hospital, 9AM-3 PM

Oct. 27, 2004 "Immunization A-Z", Porter County Health Dept., Valparaiso, 9AM-3PM

Nov. 10, 2004 "Immunization A-Z" Hamilton County 4 H Fairgrounds, 9AM-3 PM

Nov.16, 2004 "Immunization A-Z", St. Francis College, Fort Wayne (FULL)

Dec.1, 2004 "Immunization A-Z", IUMG, Indianapolis. (FULL)

Dec. 3, 2004 "Immunization A-Z" ISDH Rice Auditorium, 9AM- 3PM

Dec. 9, 2004 "Immunization A-Z" Elkhart General Hospital, 9AM-3 PM

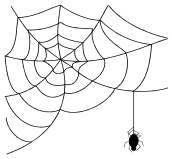
NOTE: No courses will be scheduled for August.

NOTE: There is no charge for any of these events.

NOTE: You must register for these events. Training materials are provided.

Contact Beverly Sheets at 317-501-5722 or hepbbev@aol.com for further information and to schedule "Immunizations From A –Z" and other immunization events in your area.

NOTE: NO county courses will be scheduled for July and August.
There is NO CHARGE for any of these events.
YOU MUST REGISTER for these events. Training materials are provided.



Wonderful Wide Web Sites

ISDH Data Reports Available

The ISDH Epidemiology Resource Center has the following data reports and the Indiana Epidemiology Newsletter available on the ISDH Web Page:

http://www.statehealth.in.gov/dataandstats/epidem/epinews_index.htm

Indiana Cancer Incidence Report (1990, 95, 96, 97)

Indiana Cancer Mortality Report (1990-94, 1992-96)

Indiana Health Behavior Risk Factors (1995-96, 97, 98, 99, 2000, 2001, 2002)

Indiana Health Behavior Risk Factors (BRFSS) Newsletter

Indiana Hospital Consumer Guide (1996)

Public, Hospital Discharge Data (1999, 2000, 2001)

Indiana Maternal & Child Health Outcomes & Performance Measures (1988-97, 1989-98, 1990-99, 1991-2000)

Indiana Marriage Report (1995, 97, 98, 99, 2000)

Indiana Mortality Report (1999, 2000, 2001, 2002)

Indiana Natality Report (1995, 96, 97, 98, 99, 2000, 2001, 2002)

Indiana Induced Termination of Pregnancy Report (1998, 99, 2000)

Indiana Infectious Diseases Report (1997, 1998, 1999, 2000, 2001)

Former Indiana Report of Diseases of Public Health Interest (1996, 97, 98, 99)

HIV Disease Summary

Information as of July 31, 2004 (based on 2000 population of 6,080,485)

HIV - without AIDS to date:

320	New HIV cases from June 2003 thru July 2004	12-month incidence	5.26 cases/100,000
3,844	Total HIV-positive, alive and without AIDS on July 31, 2004	Point prevalence	63.22 cases/100,000

AIDS cases to date:

411	New AIDS cases from June 2003 thru July 2004	12-month incidence	6.76 cases/100,000
3,731	Total AIDS cases, alive on July 31, 2004	Point prevalence	61.37 cases/100,000
7,631	Total AIDS cases, cumulative (alive and dead)		

REPORTED CASES of selected notifiable diseases

Disease	Cases Reported in July *MMWR* Week 27-30		Cumulative Cases Reported January - July *MMWR* Weeks 1-30	
	2003	2004	2003	2004
Campylobacteriosis	76	38	217	173
Chlamydia	1,168	1,208	9,677	10,170
E. coli O157:H7	16	2	41	17
Hepatitis A	9	6	35	30
Hepatitis B	4	3	17	19
Invasive Drug Resistant *S. pneumoniae* (DRSP)	22	11	107	99
Invasive pneumococcal (less than 5 years of age)	4	2	32	26
Gonorrhea	469	448	3,643	3,537
Legionellosis	3	2	12	15
Lyme Disease	3	1	9	3
Meningococcal, invasive	4	1	31	13
Pertussis	5	12	33	55
Rocky Mountain Spotted Fever	1	0	1	3
Salmonellosis	62	21	291	223
Shigellosis	14	0	79	93
Syphilis (Primary and Secondary)	8	6	31	33
Tuberculosis	18	3	83	71
Animal Rabies	4 (bats)	1 (bat)	6 (bats)	5 (4 bats and 1 skunk)

For information on reporting of communicable diseases in Indiana, call the *ISDH Epidemiology Resource Center* at (317) 233-7665.

Indiana
Epidemiology
Newsletter

The *Indiana Epidemiology Newsletter* is published by the Indiana State Department of Health to provide epidemiologic information to Indiana health professionals and to the public health community.